

CLAIMS

What is claimed is:

1. A drum washing machine, comprising:
a water tub;
a rotary tub rotatably provided in the water tub;
a pumping unit to pump water contained in a lower portion of the water tub into the rotary tub; and
a control unit to control the pumping unit;
wherein the control unit controls the pumping unit to pump the water contained in the lower portion of the water tub into the rotary tub while determining an amount of a laundry load.
2. The drum washing machine according to claim 1, wherein the pumping unit comprises:
a circulating pipe having a first end coupled to an inside of the water tub and a second end disposed at an inlet of the rotary tub;
a pump to pump the water contained in the water tub into the rotary tub; and
a spray nozzle disposed at the second end of the circulating pipe.
3. The drum washing machine according to claim 2, further comprising a motor to rotate the rotary tub, wherein the control unit controls the motor to rotate the rotary tub in opposite directions while controlling an operation of the pumping unit.
4. The drum washing machine according to claim 3, further comprising a water level sensor to detect a water level of the rotary tub, wherein the control unit determines the water level from the water level sensor in response to the pump and the motor being simultaneously stopped.
5. The drum washing machine according to claim 1, further comprising a key input unit to receive washing courses according to materials of the laundry load, wherein the control unit operates the pump according to ON-OFF periods corresponding to the washing courses.

6. The drum washing machine according to claim 5, wherein the key input unit is provided with washing course buttons for one or more of cotton fabrics, mixed fabrics, woolen fabrics, and synthetic fibers.

7. The drum washing machine according to claim 6, wherein the ON-OFF periods of the pump are set according to a chosen one of the washing course buttons.

8. The drum washing machine according to claim 7, wherein durations of OFF periods of the ON-OFF periods increase from the cotton fabrics, to the mixed fabrics, to the woolen fabrics, to the synthetic fibers.

9. A method of controlling a drum washing machine, the drum washing machine having a water tub, a rotary tub, and a pumping unit to pump water contained in a lower portion of the water tub into the rotary tub, the method comprising:

feeding a set amount of water according to a selected washing course; and
operating the pumping unit to pump the water contained in a lower portion of the water tub into the rotary tub while determining an amount of a laundry load.

10. The drum washing machine control method according to claim 9, further comprising operating a motor to rotate the rotary tub in opposite directions while controlling an operation of the pumping unit.

11. The drum washing machine control method according to claim 10, further comprising determining a water level of the rotary tub through a water level sensor, which detects the water level of the rotary tub, in response to the pumping unit and the motor being simultaneously stopped.

12. The drum washing machine control method according to claim 9, wherein the pumping unit is designed so that a time duration of pumping operations thereof is preset according to materials of the laundry load.

13. The drum washing machine control method according to claim 12, wherein the time duration of pumping operations of the pumping unit increases from a cotton fabrics washing course, to a mixed fabrics washing course, to a woolen fabrics washing course, to a synthetic fiber washing course.

14. A drum washing machine, comprising:
a control unit to control a time duration of water pumping operations according to a determination of a type of fabric in a laundry load;
wherein the control unit determines a load amount of the laundry load by determining the number of the water pumping operations required to reach a predetermined water level.

15. A drum washing machine, comprising:
a pumping unit to pump water; and
a control unit to control the pumping unit to perform supplemental pumping operations until a predetermined water level is reached;
wherein the control unit determines a laundry load amount according to a total of the supplemental pumping operations.